

# QHWB of the “orthogonal” and “symplectic” types Lie subalgebras of the matrix quantum pseudodifferential operators

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In this talk we will characterize the irreducible quasifinite highest weight modules of some subalgebras of the Lie algebra of matrix quantum pseudodifferential operators  $N \times N$ .

In order to do this, we will first give a complete description of the anti-involutions that preserve the principal gradation of the algebra of  $N \times N$  matrix quantum pseudodifferential operators and we will describe the Lie subalgebras of its minus fixed points. We will obtain, up to conjugation, two families of anti-involutions that show quite different results when  $n = N$  and  $n < N$ . We will then focus on the study of the “orthogonal” and “symplectic” type subalgebras found for case  $n = N$ , specifically the classification and realization of the quasifinite highest weight modules.

## References

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